

ground less than 300 feet above the sea, and in New Jersey, west of Matawan, there are several low nests about 100 feet above the sea. This ant is not common in the low lands of New Jersey.

The beautiful *Argynnis diana* was flying at the time of our visit to Clayton. Two females were seen and one of the many males was captured, but they were usually in a great hurry.

As nearly all of the water is actively engaged in getting down hill in the vicinity of Clayton, there are not many pond holes and swamps, so we saw but few of the dragon flies that frequent such places. *Libellula flavida* was quite common. Two *Tachopteryx thoreyi* were seen along War Woman Creek on July 25, and one alighted on Mr. Leng's light-colored shirt. Alighting on light-colored garments appears to be a specialty with this large dragon fly, and we have known them to act in this manner on several occasions. They have also the habit of resting on the trunks of trees, where owing to their gray color they can hardly be detected. From such a place of vantage they sally forth after their unsuspecting victims.

PSAMMOCHARIDÆ: CLASSIFICATION AND DESCRIPTIONS.

BY NATHAN BANKS,

EAST FALLS CHURCH, VA.

The Psammocharidæ are a family in the superfamily Scolioidea, which includes also the Scoliidæ, Thynnidæ, Mutillidæ, and Sapygidæ. The earlier writers on the family had no definite arrangement though they erected a number of genera, most of the species being grouped in five of these genera, *Pompilus*, *Priocnemis*, *Pepsis*, *Agenia*, and *Ceropales*. *Pompilus* and *Agenia* are preoccupied, so other names must replace them. A prime division was made on the number of submarginal cells, and this character is still used in the latest (Ashmead) classification. I do not consider it of great value, indeed one species has specimens with two cells in one wing and three in the other, while other specimens have two or three in both wings. Whether the hind tibiæ were irregularly spined, serrately spined, or

unarmed was also a prime character with many writers. Various species of *Pseudagenia* have distinct spines on the hind tibiæ, and the males of certain *Priocnemis* have the hind tibiæ almost mutic.

Thomson was the first to discover a really valuable character in the furrow on the second ventral segment. This unfortunately breaks down in the males of some *Pseudagenia*, but by using it in connection with a hitherto unmentioned venational character (as in the following table) one may recognize two groups. Fox, and others, laid much importance on the development of the labrum. In *Noto-cyphus* and *Ceropales* it is entirely exposed, but in many forms it is more or less exposed, and in *P. maura* and *P. interrupta* it is usually so much exposed that Ashmead put these in the group with *Ceropales*. Mr. Rohwer informs me that Ashmead's type of *Agcnioxenus* is merely a specimen of *P. interrupta*.

Kohl made a classification of the family, dividing the *Pompilus* group up into many sections, sometimes without names. One of his main characters is the position of the origin of the cubitus in the hind wing, whether before, interstitial with, or beyond the end of the cell beneath. I doubt if this character is stable for the European forms, but certainly when applied to our species it is full of pit-falls, and should be used only in connection with other structures that may check it.

Ashmead, with catholic liberality, accepted all the preceding classifications and merged them into one, adopting in some sense nearly all of the former genera and making numerous new ones. His greatest mistakes were in trying to apply the character of the exposed labrum in a strict sense, and in using Kohl's character of the position of cubitus in the hind-wing for our American species. Many of his genera represent natural groups, but his characters for them are often inconstant or inapplicable. It is impossible to make a new classification in a day, and in presenting that below I have used all that I could find of value in previous systems and have had the fortune to discover a few additional points that may be of use in arranging our species.

Ashmead's genus *Pompilinus* is a good one, when made to include some other forms, but his distinguishing characters are not usable; however, I find that this genus, and one or two allied ones, may be separated by the absence of erect hair on the metanotum. I am not

certain as to the first generic name for this group, and used *Pompiloides* Rad. Disregarding the number of submarginal cells (and one species of this genus is variable in that character) the name, *Aporus*, would be available, and I presume, will be adopted, eventually. Ashmead's genus *Spilopompilus* may be recognized by the vestiture of the basal abdominal segment, it is the same as *Episyrus*. Ashmead's *Batazonus* and *Pacilopompilus* may together form another genus based on an unused character. *Arachnophroctonus* Ashmead is closely allied, but may be kept separate on other unused characters. The absence or presence of spines on the under surface of the last joint of the hind tarsi will distinguish the two groups of the old *Priocnemis*, and the absence or presence of erect hair on the metanotum will divide the old *Agenia*. The shape of the third submarginal cell has often been used, and I have used it somewhat in the table, but am aware that it breaks down in other groups, and may not therefore be constant in those I have used. However, other characters are used in connection with it. I know of no character to separate the species considered as belonging to *Mygimima* from the large species of the old *Priocnemis*. Mr. Rohwer informs me that the typical *Mygimima* is very different from our species so placed, therefore the genus may be valid, but our species belong with the large species of *Priocnemis* in a group called *Priocnemoides* by Radoszkowski. There may be an older name for this group. Under *Psammochares* I have tabulated the groups that can be distinguished by characters in the females; but until the males can also be distinguished I prefer to keep them all under the one name. Our *P. virginensis* is very close to the type of *Anoplius*. *P. illinoisensis* will also go in this section. *Lophopompilus* was made for large *Psammochares* with an excised clypeus. I have not seen the genotype, but if not congeneric with our *P. athiops* then Ashmead's *Pompilogastra* is available. The type of *Calicurgus* is extremely close to our *Priocnemis alienatus*, but the character used for the genus is not constant in the two European specimens I have, nor in our species, therefore I do not use the name. The type of *Aporus* is structurally close to *P. marginatus*, it is not closely related to the species placed in this country in *Aporus*, therefore I make a new name for our species. I have not seen the type of *Agenia*, but some species have the metanotum hairy as in *Pseudagenia*. *Agenia* is preoccupied in the Hemiptera, and

I make a new name for our species without hairs on the metanotum, not knowing whether it will include the typical *Agenia* or not. The type of *Melanaporus* Ashm. is a two-celled form of *P. argenteus* or a close ally.

TABLE OF SUBFAMILIES.

1. Claws of hind tarsi bent at right angle; antennæ situate considerably above the clypeus; labrum exerted for its entire length; metanotum at base bilobed, the spiracle in a depression opening forward.....*Ceropalina*.
Claws not bent at right angle; spiracles not in such a depression.....2
2. Metanotum flat above, not bilobed at base, the spiracles situate nearly twice their length from the anterior margin of metanotum; labrum exerted for its entire length; no spines under last joint of hind tarsi....*Notocyphina*.
The spiracles not much more than their length from the anterior margin of metanotum; labrum never more than partially exerted.....3
3. A transverse furrow on the second ventral segment (absent in some males); in the fore-wings the second discoidal cell at base is right-angled, and without a distinct pocket.....*Pepsina*.
No such furrow on the second ventral segment; in fore-wings the second discoidal cell has a small pocket at base; the hind tibiæ never serrate, always more or less irregularly spined.....*Psammocharina*.
The *Ceropalina* has, in our fauna, but one genus—*Ceropales*.

The *Notocyphina* include two genera:

1. With a distinct malar space between eyes and base of mandibles; male antennæ crenulate below; labrum broader than long; hind tibiæ spined*Allocyphonyx*.
Without a malar space; male antennæ not crenulate; hind tibiæ barely spined; labrum longer than broad.....*Notocyphus*.

The *Pepsina* include several genera, some of which may be divided.

1. Hind tibiæ without spines or only very weak ones, never serrate; in hind-wings the transverse median vein ends before the cubitus; male often without ventral furrow, last tarsal joint without spines beneath or few very weak ones (*Ageniellini*)2
Hind tibiæ more or less serrately spined, if (♂) nearly smooth, then the transverse median vein of hind-wings is not before cubitus (*Pepsini*)...3
2. Metanotum with erect hair above.....*Pseudagenia*.
Metanotum without erect hair above.
Ageniella n. gen. (type, *Agenia accepta* Cr.).
3. Wings rudimentary*Myrmecosalius*.
Wings well developed.....4
4. Last joint of hind tarsus without spines beneath; in the hind-wings the transverse median vein ends before or at the cubitus.....*Cryptocheilus*.

- Last joint of hind tarsus distinctly spined beneath; in hind-wings the transverse median vein ends at or beyond the cubitus.....5
5. In fore-wings the first recurrent vein meets the second submarginal cell at the basal third; in hind-wings the transverse median vein is farther beyond the cubitus than the width of the cell; last joint of hind tarsi about twice as long as the penultimate.....*Pepsis*.
- In fore-wings the first recurrent vein ends beyond the basal third of the second submarginal cell; the last joint of hind tarsi is not twice as long as the penultimate*Priocnemoides*.

The Psammocharinæ include a number of generic groups the principal of which can be separated by the following table. There are other sections which further study will doubtless show to be valid.

1. Pronotum longer than mesonotum, nearly flat above, scarcely arched longitudinally, last joint of hind tarsi without spines beneath; tarsi I of female without comb; no erect hair on the metanotum.....2
Pronotum shorter than mesonotum, plainly arched longitudinally.....3
2. With two submarginal cells.....*Planiceps*.
With three submarginal cells.....*Pedinaspis*.
3. Basal abdominal segment with appressed pubescence, different from that on the following segments; pronotum with the posterior margin membranous and often white; third cell as broad as long.....*Episyrion*.
Basal segment of abdomen not with pubescence different from the following segments4
4. No erect hair on the metanotum above, only pubescence.....5
Erect hair on the metanotum above.....8
5. Metanotum produced angularly at the posterior corners; but two submarginal cells*Aporinellus* n. gen. (type, *Aporus fasciatus* Sm.).
Metanotum not produced angularly behind; usually three submarginal cells6
6. Metanotum transversely striate; marginal cell as long as distance to tip; third cell long, and wide above.
Ridestus n. gen. (type, *Psammochares transversalis* Bks.).
Metanotum not transversely striate.....7
7. Marginal cell long, hardly its length from tip of wing; third submarginal cell wide above; basal vein of fore-wings interstitial with the transverse*Sericopompilus*.
Marginal cell short, subtriangular, much more than its length from tip of wing; third submarginal cell much narrowed, triangular, or petiolate above; basal vein usually a little before the transverse.....*Pompiloides*.
8. A short longitudinal impressed line or groove on posterior part of the pronotum; head nearly or fully as broad as long; not wholly black species9
No such impressed line or groove on the pronotum; often wholly black.

Psammochares.

9. Metanotum distinctly grooved at base; upper margin of clypeus nearly evenly convex *Arachnophroctonus*.
 Metanotum not grooved at base; upper margin of clypeus sinuate or zigzag *Batazonus*.

The groups or subgenera of *Psammochares* distinguishable in the female only are as follows:

1. Clypeus plainly emarginate in middle..... *Lophopompilus* (*athlops*, *atrox*).
 Clypeus not more than evenly concave..... 2
 2. No distinct tarsal comb..... *Anoplus* (*illinoisensis*, *virginiensis*).
 A distinct tarsal comb..... 3
 3. Third joint of antennæ very short; hardly longer than first.

Sophropompilus (*ingenuus*).

Third joint of antennæ much longer than first..... *Psammochares*.

The discovery of additional characters will doubtless raise these to generic ranks.

Pompilogastra equals *Lophopompilus*, and *Pycnopompilus* equals *Psammochares*.

***Psammochares ithaca*, new species.**

Female.—Clypeus slightly hairy, rather rounded in front, antennæ slender, but not very long, the basal joint not hairy, the third much longer than first, but second plus third hardly as long as width of vertex, the short furrow above antennæ does not reach ocelli, anterior ocellus not more than diameter from laterals, and these about as near to each other as to eyes; vertex straight across, with long erect hair, as also on the face; pronotum angulate behind, metanotum short, rounded, with a broad deep median furrow, slightly hairy above, more dense on sides; abdomen not flattened, bristly at tip, and ventral segments with a few hairs on each; legs long, the tarsi long and slender, no distinct comb on anterior tarsus, the spines short and straight, the long spur on hind tibia hardly more than one-half the metatarsus; spines beneath last joint of hind tarsi, claws long, with tooth, almost cleft. Wings black, paler on basal part, but not as much difference as in *P. virginiensis*, second submarginal quadrate, receiving the first recurrent vein near tip, third submarginal as large, but narrowed above, receiving the second recurrent a trifle beyond the middle, this vein arising from beyond middle of anal cell, basal veins interstitial, in hind wings the cubitus is interstitial with end of the cell. Color wholly black; belongs to section of *Anoplus*.

Expanse 16 mm.

From Ithaca, N. Y., early July; related to *P. virginiensis* but distinct by grooved metanotum.

***Psammochares bellicosus*, new species.**

Male.—Black, iridescent blue and purple, a patch of silvery each side between antennæ and eyes. Clypeus truncate below, only a little hairy;

antennæ moderately stout, third joint fully as long as the first; a line to anterior ocellus, this not much more than diameter from the laterals, and these a little nearer to each other than to eyes; vertex slightly rounded, face and vertex long-haired; pronotum with only a few hairs, arcuate behind; metanotum with short hairs, quite suddenly declivous behind; abdomen rather broad, depressed, last segment dull black, others iridescent, venter with few hairs; legs strongly spined, long spur of hind tibia two-thirds of the metatarsus, no spines below on last joint of hind tarsus, nor other tarsi. Wings deep black, iridescent; second submarginal cell a little longer than broad, receiving the first recurrent vein close to tip; third submarginal cell broader than long, narrowed above, receiving the second recurrent at middle, this vein arising from beyond middle of the anal cell; basal vein interstitial with the transverse; in hind-wings the cubitus is interstitial with the end of the cell.

Length 15 mm.

From Palmerlee, Arizona, Sept. (Biederman).

Psammochaeres gracilicornis, new name.

A new name for the *Ps. tenuicornis* Bks., which I find is preoccupied by Tournier in 1889.

Psammochaeres astur, new species.

Female.—Black; clypeus short-haired, bristles very distinct, lower margin truncate; antennæ moderately slender, basal joint not hairy, third joint very long, second plus third as long as vertex width, a line to anterior ocellus, this scarcely more than diameter from laterals, and these nearer to eyes than to each other; vertex straight; head above the antennæ with long hair, face and especially vertex very narrow; pronotum plainly angulate behind; metanotum sloping, long-haired all over, with a median groove; abdomen dull black, basal segment hairy at base, apical segment finely hairy, ventral segments with a few hairs before tips; legs slender, very fine short hairs on femora, spines strong, tarsal comb long, long spur of hind tibia nearly two-thirds of the metatarsus, spines below last joint of hind tarsus; claws with rather small tooth. Wings black, rather darker on tip, second submarginal cell longer than broad, receiving the first recurrent vein much beyond the middle, third submarginal cell about as long as second, and only a little narrowed above, receiving the second recurrent vein before middle, this vein arising from beyond middle of anal cell; basal vein before or interstitial with the transverse; in hind-wings the cubitus interstitial with end of the cell.

Length 15 mm.

From Great Falls, Md., 12 July, Falls Church, Va., Sept. and Oct., and Waldoboro, Me.

Has a narrower face than *Ps. relativus*, and more angulate pronotum.

Pompiloides mæstus, new species.

Female.—Deep dull black, not silvery sericeous; clypeus truncate in front, rather brown pubescent, not hairy but with the four bristles large and erect, antennæ rather slender, third joint much longer than the first, the first not hairy, a groove to the anterior ocellus, this about twice its diameter from the rather smaller laterals, these plainly nearer to eyes than to each other, vertex straight across, head above antennæ with some long hair, the inner orbits slightly, evenly concave; pronotum quite long, angulate behind; metanotum short evenly rounded, with a median furrow, and a faint pit each side behind, abdomen rather broad at base, depressed on basal part, compressed near tip, hairy at tip, and a row of hairs on each ventral segment; anterior tarsus with the spines short and straight, but little longer than the width of joint, not forming a comb; long spur of hind tibia more than one-half of metatarsus; last joint of hind tarsus with spines beneath; legs with moderate spines, those on hind metatarsi rather longer than width of joint. Wings fuscous, much darker on tips, the hind pair plainly pale on basal half, marginal cell short, second submarginal as broad as long, third subtriangular or slightly petiolate, receiving the second recurrent beyond the middle, and this vein arising before the middle of anal cell, transverse median vein beyond the basal; in hind wings the cubitus is interstitial with end of cell.

Expanse 13 to 20 mm.

From Fedor, Lee Co., Texas (Birkmann).

Pompiloides rufibasis, new species.

Female.—Black, first and second abdominal segments partly red. Clypeus broad, truncate below, no bristles visible; antennæ short, no hairs on basal joint, third joint scarcely longer than the first, no line to anterior ocellus, this about two diameters from the laterals, and these nearer to each other than to the eyes; vertex rounded, slightly hairy, but face only pubescent; pronotum scarcely arcuate, nearly transverse behind; metanotum short, rounded, sericeous, with distinct median line; abdomen moderately broad, apical part of first segment and basal half of the second red, hardly as much below, apical segment hairy below; legs slender, well spined, tarsal comb with spines longer than width of joint, long spur of hind tibia hardly two-thirds of the metatarsus. Fore-wings black, hind-wings dusky; second submarginal cell square, third as large, but little narrowed above, first recurrent beyond middle of second marginal cell, second recurrent arising from middle of anal cell, meeting third submarginal at middle; basal veins scarcely interstitial.

Length 6 mm.

From Ithaca, N. Y., early July.

Pompiloides insolens, new species.

Male.—Black; clypeus and face each side by eyes silvery, metanotum sericeous. Clypeus broad, truncate below, bristles not distinct; antennæ short, basal joint without hair, a line to anterior ocellus, this scarcely more than

diameter from the laterals, and these closer to eyes than to each other; vertex straight, face rather long, short-haired; pronotum angulate behind; metanotum long, with distinct median groove; abdomen depressed, elongate, last segment rather broad at tip, no brushes of hair on venter; legs very slender, weakly spined, long spur of hind tibia nearly three fourths of metatarsus; wings rather pale, but black beyond cells, second submarginal with oblique sides, third triangular, receiving the second recurrent beyond middle, this vein very oblique, and arising before middle of anal cell.

Length 8 mm.

From Black Mt., N. Car., May; Chain Bridge, and Great Falls, Va., June.

Larger than *P. cylindricus*, with distinct groove on metanotum, and larger ocelli.

Pompiloides minor, new species.

Female.—Deep black, clypeus slightly silvery. Clypeus broad, truncate below, bristles very weak or absent; antennæ short, no hairs on basal joint, third joint very short, not longer than first, not one half the width of vertex, no distinct line to anterior ocellus, this fully twice its diameter from the laterals, these as far from eyes as from each other; vertex slightly convex; head hairy; pronotum arcuate behind; metanotum short and broad, no distinct median line; abdomen shining above, last segment hairy; legs moderately spined, spines of tarsal comb one and one half the width of joint, long spur of hind tibia two thirds of metatarsus; wings uniformly black, second submarginal square, third triangular, receiving the second recurrent beyond middle, this vein arising from about middle of anal cell.

Length 6 mm.

From Falls Church, Va., 2 Aug., and Southern Pines, N. Car., 8 July (Manee). Distinct from the female of *P. cylindricus* by the very short third joint of antennæ.

Pompiloides parvulus, new species.

Female.—Black; only slightly silvery on the clypeus and metanotum; mandibles reddish in the middle; wings black, usually darker on tip than elsewhere. Antennæ rather short, but slender, the third joint fully three times as long as broad, and a little longer than the fourth joint; a line up to anterior ocellus, this a little more than diameter from the equal hind ocelli, the latter nearly as close to each other as to the eyes; face about as broad above as below, vertex slightly convex; pronotum distinctly angulate behind, metanotum sloping, with a median furrow; abdomen not much longer than thorax, cylindrical, hairy near tip; legs distinctly spined, but spines on the hind tibia are not as long as width of the joint; long spur of hind tibia reaching a little beyond middle of the metatarsus; tarsus I with usual comb of short spines. Wings with second and third submarginal cells subequal (or even third smaller), both subtriangular; marginal cell short, oblique at tip; first recurrent meets

second submarginal near tip, second recurrent arises scarcely its length out on anal cell and curves up, meeting third submarginal before the middle.

Male.—Similar; more slender, heavier antennæ, and long spur of hind tibia is about three fourths the length of metatarsus.

Length 4.5 to 6 mm.

From Boulder and Florissant, Colo., in April, May, June and July (Rohwer); type in National Museum, cotype in coll. Banks.

Pompiloides consimilis, new species.

Perhaps but a variety of *P. parvulus*; is rather larger, has stouter antennæ, the third joint not three times as long as broad, the pronotum less distinctly angulate behind; the abdomen a little longer; the venation similar, but the second recurrent vein arises much more than its length out on the anal cell, so that the cell before it is much longer than in *P. parvulus*.

From Florissant, Colo., June and July (Rohwer); type in National Museum, cotype in coll. Banks.

Sericopompilus plutonis, new species.

Male.—Dull black, rather brown pubescent in part; clypeus brown pubescent, slightly concave in front, no bristles nor hair; antennæ long and slender, third joint much longer than the first, latter without hair; very distinct groove to front ocellus, latter one and one half diameter from equal laterals, latter plainly nearer to eyes than to each other, vertex straight across, inner orbits distinctly concave above, straight beneath, face just above antennæ and the vertex with few erect hairs; pronotum angulate behind, metanotum rather long, nearly flat above, evenly rounded behind, no distinct median groove; abdomen depressed throughout, ventral segments with precapical row of hairs, legs long, tarsi long and slender, long spine on hind tarsi nearly two thirds as long as the metatarsus, spines on metatarsus not as long as width of that joint. Wings (both pairs) black, not darker at tips; second submarginal cell longer than broad, third narrowed above, but not triangular, receiving the second recurrent vein beyond the middle, this vein arising from middle of anal cell, the basal veins interstitial, in hind-wings the cubital arises much before the end of the cell.

Expanse 18 mm.

From Fedor, Lee Co., Texas (Birkmann).

TABLE OF SERICOPOMPIUS.

1. Wings all black; no white mark on hind tibiæ, body wholly black...*plutonis*.
Wings black only at tip, or near there.....2
2. Hind tibiæ white at base above.....4
Hind tibiæ not white at base above.....3
3. Long spur of hind tibiæ three fourths of metatarsus; no white at tip of
abdomen*birkmanni*.

- Long spur of hind tibiæ not three fourths of metatarsus; white at tip of abdomen *biedermanni*.
4. Middle and hind tarsi marked with white, wings black at tips only.....5
Middle and hind tarsi all black, no red on abdomen, wings dark below stigma, and also near tip..... *humilis*.
5. Basal joint of middle and hind tarsi mostly white; no red on abdomen. *posticatus*.
Basal joint of middle and hind tarsi black; red on second segment of abdomen *cinctipes*.

Episyron atrytone, new species.

Female.—Black, clypeus densely hairy, slightly rounded below, the margin smooth; antennæ with basal joint hairy; third joint about twice the length of first, second plus third longer than vertex width; no groove to anterior ocellus, this a little more than diameter from laterals, these nearer to eyes than to each other, vertex rounded, head very hairy; pronotum angulate behind, with appressed pubescence and long hair; metanotum rather flat, densely scaly pubescent behind, and hairy all over; basal joint of abdomen with appressed scaly pubescence and long hair, last segment hairy; legs strongly spined, comb of tarsus with spines extremely long, those on second and third tarsal joints longer than joint itself; long spur on hind tibia over two thirds of metatarsus, the spines on metatarsus much longer than the width of the joint, spines below last joint of hind tarsi, claws nearly cleft, with a long sloping tooth. Wings dusky, but black at tip; second submarginal one and one half times as long as broad, receiving the first recurrent vein beyond the middle, third submarginal as broad as long, narrowed above, the second recurrent arising beyond middle of anal cell and meeting the third submarginal at middle, the marginal cell acute, not much more than its length from tip of the wing, basal vein interstitial with the transverse; in hind wings the cubitus arises before end of the cell.

Length 12 to 15 mm.

From Fedor, Lee Co., Texas, April (Birkmann).

TABLE OF EPISYRON.

- | | |
|---|--------------------|
| 1. Hind legs partly reddish..... | 2 |
| Hind legs mostly black, not at all red..... | 3 |
| 2. A transverse white spot at tip of the mesonotum..... | <i>porus</i> . |
| No such spot | <i>posterus</i> . |
| 3. Hind tibiæ with white spot at base..... | 4 |
| No such spot | 7 |
| 4. Spurs white, body partly sericeous, wings black only at tips, sometimes white spots on third segment of abdomen..... | <i>snowi</i> . |
| Spurs black | 5 |
| 5. An apical white spot on abdomen, as well as others, wings pale except tip | <i>5-notatus</i> . |
| No apical white spot..... | 6 |

6. Wings blackish all over, third segment with a pair of white spots; larger species *biguttatus*.
Wings black at tip only; no white spots on abdomen; small species, *californicus*.
7. Second and third joint of antennæ as long as vertex width; head long-haired *atrytone*.
Second and third joint of antennæ not as long as vertex width; head short haired; clypeus and basal joint of antennæ scarcely hairy *maneei*.

Aporinellus rufus, new species.

Female.—Reddish throughout, except black head, and the antennæ beyond the second joint; clypeus reddish; wings blackish at tip. Face below, posterior margin of pronotum, and the first three abdominal segments at tip more or less distinctly silvery. Antennæ rather short, third joint scarcely, if any, longer than the fourth; clypeus truncate at tip; posterior ocelli a little nearer to the eyes than to each other; longer spur of hind tibia two thirds as long as the metatarsus; second submarginal cell of fore-wing scarcely any longer than broad.

Length 5 to 6 mm.

From Boulder, 30 May, 1 June, and Florissant, 19 June, Colorado (Rohwer coll.); type in National Museum, cotype in coll. Banks.

Aporinellus laticeps, new species.

Female.—Colored as *A. fasciatus*, the segments of abdomen fasciate with silvery pubescence; fore-wings blackish at tips, fumose elsewhere; mandibles reddish near tips. Clypeus truncate in front; antennæ rather short, but the third joint is a little longer than the fourth, face plainly broader above than below; ocelli small and wide apart, the anterior ocellus fully three times its diameter from the lateral ocelli, and these are nearer to the eyes than to each other, longer spur on hind tibia fully two thirds of the metatarsus; second submarginal cell fully twice as long as broad, the second recurrent vein plainly before tip of cell.

Length 8 mm.

Similar to *A. fasciatus*, but the noticeably wider vertex, and much broader ocellar triangle distinguishes it.

From Boulder, Colo., Sept. (Rohwer): type in National Museum, cotype in coll. Banks.

TABLE OF APORINELLUS.

- | | |
|--|------------------------|
| 1. Thorax and abdomen reddish, head and most of antennæ black..... | <i>rufus</i> . |
| Thorax and abdomen black | 2 |
| 2. Most of hind legs reddish..... | <i>ferrugineipes</i> . |
| All legs black | 3 |
| 3. Body not much sericeous, fourth segment of abdomen hardly sericeous at tip; wings nearly uniform blackish | <i>apicatus</i> . |

- Body strongly sericeous, fourth segment of abdomen broadly sericeous....4
 4. Vertex broader than face below.....*laticeps*.
 Vertex narrower than face below.....*fasciatus*.

Pedinaspis.

Pronotum long, flat, barely arched; with three submarginal cells, second and third each receiving a recurrent vein; basal veins interstitial with the transverse, in hind-wings the cubitus always arises beyond the end of the cell; coxæ I not reaching to coxæ II; no spines under last joint of hind tarsi.

It would probably be better to include in *Pedinaspis* those species of *Planiceps* in which the second submarginal cell receives but one recurrent vein, thus restricting *Planiceps* to those species in which this cell receives both recurrent veins.

P. lævifrons on account of having the ocelli placed so low on the face may form a new subgenus; it also has the transverse vein in fore-wings sloping backward.

Psorthaspis n. subgen.—type, *Parapompilus lævifrons* Cress.

TABLE OF PEDINASPIS.

- | | |
|---|---------------------|
| 1. Wings banded | 2 |
| Wings not banded | 4 |
| 2. First segment of abdomen black, second black with two yellowish spots, and third with basal pale band..... | <i>luctuosus</i> . |
| First and second segments mostly yellowish..... | 3 |
| 3. Tip of abdomen pale | <i>legatus</i> . |
| Tip of abdomen black..... | <i>maria</i> . |
| 4. Abdomen wholly black..... | 5 |
| Abdomen more or less reddish..... | 9 |
| 5. Wings wholly pale, apical part of abdomen with short, dense white hair | <i>magnus</i> . |
| Wings more or less black..... | 6 |
| 6. Metanotum transversely wrinkled behind; abdomen purplish..... | <i>planatus</i> . |
| Metanotum not wrinkled | 7 |
| 7. Wings deep black; metanotum not much excavate behind, and not pubescent | 8 |
| Wings less black; metanotum strongly excavate behind, and white pubescent | <i>australis</i> . |
| 8. Head smooth; anterior ocellus about as near to antennæ as to vertex ridge | <i>lævifrons</i> . |
| Head roughened with lines, ocelli about as high as usual..... | <i>vicinus</i> . |
| 9. Thorax reddish | <i>sanguineus</i> . |
| Thorax blackish | <i>texanus</i> . |

***Pseudagenia cœrulescens* Dahlb.**

Female.—Head and thorax bluish black, clothed with silvery pubescence; clypeus mostly pale yellowish, but upper part dark, rather strongly rounded out on the lower margin; antennæ pale reddish brown, second joint darker, third joint a little longer than first, a faint line from antennæ to anterior ocellus, latter scarcely more than diameter from the laterals, these a little nearer to each other than to the eyes, vertex slightly rounded, front and vertex with rather long hair; pronotum arcuate behind; metanotum rather short, evenly rounded, no impressed median line, posterior sides heavily white pubescent, dorsum clothed with fine white erect hair; coxæ bluish, femora reddish, rest of legs brownish or nearly black, spurs brown, long one on hind tibia one half the length of metatarsus; abdomen dull black, hairy at tip, last segment with elongate, basally rounded, shining pygidial area. Wings nearly hyaline, scarcely smoky, not darker at tip, third submarginal cell longer than the second, and broad at tip, receiving the second recurrent before the middle, this vein arising very much beyond the middle of anal cell, basal veins interstitial; in hind wings the cubital arises beyond the cell.

Length 8.5 mm.

Fedor, Lee Co., Texas (Birkmann).

A male, which appears to belong here, has the face below antennæ pale yellow, except a median dark spot on clypeus; the antennæ are dark above and paler beneath, anterior legs are all pale yellowish brown, mid legs all except coxæ, but rather darker on tarsi, the hind femora pale, the long spur reaching beyond middle of metatarsus.

***Pseudagenia feroculis*, new species.**

Male.—Black throughout. Clypeus broad, truncate below, margin elevated; antennæ moderately stout, no line to anterior ocellus, this scarcely more than diameter from laterals, these as near eyes as to each other; vertex rounded, head very broad; pronotum arcuate behind; metanotum short, broad, rounded, finely punctate, with a median groove; abdomen dull black, quite long, apical segment broad, long-haired below; head, thorax, abdomen and coxæ densely black-haired, also some on the femora, long spur of the hind tibia scarcely one half of metatarsus. Both pairs of wings deep black, second submarginal square, receiving the first recurrent near the middle; third submarginal much longer than second, the second recurrent vein arising at outer third of anal cell, meeting the third submarginal before middle, the basal vein rounded at base, and before the transverse vein; in hind wing the cubitus is interstitial with end of cell.

Length 13 mm.

From Coryell Co., Texas, May (Birkmann).

***Pseudagenia nigrella*, new species.**

Female.—Black; clypeus and lower part of face, and the metanotum with white pubescence, and white hair. Abdomen shining, apical segment hairy.

Clypeus rounded below; second plus third joint of the antennæ scarcely more than two thirds of the vertex width; no line to anterior ocellus, this over diameter from the laterals, these much nearer to each other than to the eyes; vertex slightly rounded; pronotum angulate behind; metanotum sloping, no median groove; legs slender, long spur of hind tibia almost one half of metatarsus; wings nearly hyaline, hardly darker at tips; second submarginal longer than broad, receiving the first recurrent at middle; third submarginal longer than second, wide at tip, narrowed above, receiving the second recurrent before middle, this vein arising beyond middle of anal cell; basal vein a little before the transverse; in hind-wings the cubitus arises beyond end of the cell.

Length 6 to 7 mm.

From Great Falls, Va., 18 June, and Black Mountain, N. Car., May.

***Pseudagenia mexicana* var. *flavicoxa*, new var.**

Differs from typical *mexicana* in having the coxæ and antennæ yellowish, only last joint of tarsi brown; tegulæ yellowish. The long spur of hind tibia is a little longer than in the typical form.

Palmerlee, Arizona, June.

***Pseudagenia mellipes* var. *adjuncta*, new var.**

Like *mellipes*, but with the coxæ also yellow.

From Texas and Virginia.

***Pseudagenia mellipes* var. *interior*, new var.**

Like *mellipes*, but the hind tibiæ have a black line on inner side, and the antennæ are yellowish.

From Southern Pines, N. Car.

***Ageniella annecta*, new species.**

Female.—Similar in size and structure to *A. blaisdelli*, but color entirely black. Clypeus rounded below, with bristles and hair; no hair on basal joint of antennæ, third joint very long, second plus third fully as long as vertex width, line not reaching anterior ocellus, this its diameter from the rather smaller laterals, these nearer to eyes than to each other, vertex scarcely rounded; pronotum angulate behind; metanotum long, sloping, sericeous, not hairy, no median groove; abdomen with last two segments above and three below quite hairy; legs long, the tibiæ distinctly spined; long spur of hind tibiæ not one half of the metatarsus. Wings blackish, third submarginal cell much longer than broad, receiving the first recurrent toward tip, third submarginal as long as second, narrowed above, receiving the second recurrent before middle; this vein arising from outer third of anal cell; basal veins rounded at base, much before the transverse; in the hind-wings the cubitus arises beyond the end of the cell.

Length 12 mm.

From Falls Church, Va., 14 June, on *Ceanothus*.

TABLE OF AGENIELLA.

1. White marks on the pronotum; legs pale, spurs white.....*calcarata*.
No white marks on pronotum.....2
2. Body all reddish3
Body not all reddish4
3. Wings pale, banded with dark.....*accepta*.
Wings all dark*blaisdelli*.
4. Abdomen with more or less red; spurs white.....5
No red on abdomen8
5. Hind legs mostly yellowish6
Hind legs black7
6. Abdomen all reddish; antennæ all black; wings smoky.
(*rufigaster*)=*congrua*.
Abdomen black on last few segments; basal joint of antennæ yellowish;
wings hyaline, with black tip*apicipennis*.
7. Tibiæ and tarsi I yellowish; third cell short, angular on middle
behind*perfecta*.
Tibiæ and tarsi I black; third cell long, outer side oblique.....*birkmanni*.
8. Hind legs mostly yellowish.....9
Hind legs black10
9. Third cell short, outer side rounded; spurs yellowish.....*externa*.
Third cell long, outer side oblique; spurs brown.....*texana*.
10. Spurs whitish11
Spurs blackish12
11. Basal vein very much before the transverse; anterior tarsi pale.*iridipennis*.
Basal vein nearly interstitial with the transverse; anterior tarsi black.
virginica.
12. Third cell shorter than broad, outer side rounded, very small species....13
Third cell longer than broad.....14
13. All tarsi pale, except last joint; wings faintly marked in middle....*brevis*.
Tarsi black; wings uniformly blackish.....*atrata*.
14. Basal vein interstitial with transverse; third cell not very long; ♂ abdomen
petiolate15
Basal vein much before transverse; second and third cells very long;
wings black; large species.....16
15. Wings pale, tip dark; tibiæ I yellowish.....*petiolata*.
Wings dark, darker on tip; tibiæ I scarcely yellowish.....*cuphorbia?*
16. Bluish species; abdomen shining*cupida*.
Black species; abdomen dull*annecta*.

Cryptocheilus incitus, new species.

Female.—Black, body silvery sericeous. Clypeus hairy, truncate in front; antennæ slender, basal joint without hair, third very much longer than first, line above does not reach anterior ocellus, this is nearly twice its diameter from the laterals, and these full as near eyes as to each other; vertex slightly rounded, with a few long, erect hairs; pronotum angulate behind; mesonotum

with a few erect hairs; metanotum long, sloping, sericeous, median line scarcely distinct; abdomen long, sericeous, apical segments very hairy, a few hairs on preceding segment; legs very slender, hind tibiæ serrate, but with very short spines, the long spur of hind tibia scarcely one half of the metanotum. Wings nearly hyaline, fore-wings dark around tip, second submarginal fully one and one half times as long as broad, first recurrent received beyond the middle, third submarginal still longer, narrowed above, second recurrent arising beyond middle of anal cell, slightly sinuate to middle of third submarginal; marginal cell acute at tip; basal vein rounded at base, and before the transverse vein.

Length 16 mm.

From Fedor, Lee Co., Texas, 2 June (Birkmann).

TABLE OF CRYPTOCEILUS.

1. Antennæ yellowish, in part at least.....2
Antennæ black4
2. Wings dark, body ferruginous*nuperus*.
Wings hyaline3
3. Wing with three dark bands; thorax pale.....*facetus*.
Wing with apical band only, thorax black.....*placitus*.
4. Thorax reddish, also the abdomen.....5
Thorax black6
5. Head black; legs pale, small.....*scitula*.
Head reddish; legs black, larger.....*nigripes*.
6. Abdomen reddish above and below.....7
Abdomen not reddish below, sometimes above on basal segments.....10
7. Hind legs reddish, wings pale, with a dark cloud.....*alienatus*.
Hind legs black, no cloud in wing, or wings all dark.....8
8. Coxæ very hairy; western species.....*comparatus*.
Coxæ sericeous, barely hairy9
9. Abdomen sericeous; third cell longer than broad; abdomen elongate.
arcuatus.
Abdomen shining; third cell broader than long; abdomen shorter..*nothus*.
10. Abdomen with red on basal segments above.....11
Abdomen all black.....12
11. First segment of abdomen dark at tip; coxæ and femora hairy....*validus*.
First segment of abdomen all reddish.....*paneparcus*.
12. Face with dense golden hair; spurs white; pronotum shining...*fulgifrons*.
Face with silvery hair, or black.....13
13. Metanotum wrinkled behind; wings deep black; third cell much longer than broad14
Metanotum not wrinkled behind15
14. Pronotum barely angulate; marginal cell acute at tip; antennæ rather short; coxæ very hairy*fortis*.
Pronotum plainly angulate behind; marginal cell rounded at tip; antennæ very slender; middle and hind coxæ but little hairy.....*subopacus*.

15. Third cell much longer than broad, hind tibiæ only moderately serrate...16
 Third cell as broad as long, or else the hind tibiæ very strongly serrate...17
16. Metanotum with black hair, not silvery sericeous; wings nearly black; basal vein of fore-wings at lower end not rounded out.....*nebulosus*.
 Metanotum with short, white hair, silvery sericeous; wings pale; basal vein rounded out at base; hind tibiæ very weakly serrate.....*incitus*.
17. Wings uniform black; clypeus truncate, basal vein rounded out at lower end; coxæ scarcely hairy.....*pompilus*.
 Wings not a uniform black.....18
18. Clypeus convex on front edge; no distinct cloud in wings, third cell quite long*agenoides*.
 Clypeus truncate in front.....19
19. Tibia not strongly serrate near tip; a distinct stigmal cloud in wing, coxæ scarcely hairy.....*germanus*.
 Tibia strongly serrate to tip; stigmal cloud indistinct or absent; coxæ very hairy*conicus*.

***Priocnemoides pallidipennis*, new species.**

Dull black; head broad; clypeus rounded below; first and second joint of antennæ black, rest yellowish; third joint much longer than the first; a line to the anterior ocellus, this fully two diameters from the laterals, and these much nearer to each other than to eyes; vertex nearly straight across; pronotum angulate behind; metanotum long and with a median groove, transversely wrinkled behind; abdomen hairy at tip, and a few hairs on venter; legs brownish toward tips; long spur on hind tibiæ scarcely more than one fourth of the metatarsus. Wings pale yellowish, darker on tips; second submarginal cell a little longer than broad, receiving the first recurrent vein beyond the middle; third submarginal longer than second, a little narrowed above, receiving the second recurrent beyond middle, this vein arising from a little beyond middle of anal cell, only a little curved; marginal cell rounded at tip. In hind-wings the cubitus arises beyond end of the cell.

Length 12.5 mm.

From Tucson, Arizona (Snow).

TABLE OF PRIOCNEMOIDES.

1. Antennæ mostly yellow2
 Antennæ black6
2. Wings mostly black3
 Wings mostly reddish or yellowish; metanotum hairy, transversely striate5
3. Metanotum transversely striate, and hairy; wings pale before tip.
unifasciatus.
 Metanotum hardly striate, and scarcely hairy; wings all black.....4
4. Third ventral segment with a pair of humps beneath.....*fulvicornis*.
 Third ventral segment without humps.....*magnus*.

5. Wings rather reddish; in hind-wing the cubitus arises before the end of cell; second recurrent vein of fore-wings strongly bent... *flamipennis*.
Wings more yellowish; in hind-wing the cubitus arises beyond the end of cell; second recurrent vein of fore-wings but little curved... *pallidipennis*.
6. Metanotum transversely striate, and hairy.....7
Metanotum not striate8
7. Wings reddish yellow, except tip; femora I with long hair beneath.
mexicanus.
Wings mostly black, with a yellow spot..... *maculipennis*.
8. Wings mostly reddish or yellowish.....9
Wings all black; no hair on metanotum..... *idoneus*.
9. Marginal cell acute at tip; metanotum and scutellum with erect hair.
texanus.
Marginal cell rounded at tip.....10
10. Metanotum without erect hair..... *terminatus*.
Metanotum with erect hair..... *heiligbrodti*.

Pepsis.

In this genus of magnificent insects the names have become much confused; I offer only a few preliminary notes.

P. nephele: this can be recognized by the long hair beneath femora I, as well as by broadly margined wings. *P. circularis* is, I believe, the male, or else male of some closely allied species of which the female is unknown.

P. inermis: this has a fine distinguishing character in the hairs with curved tips situate in the spiny area of the hind tibiæ.

The *P. chrysothemis* and *P. pyramis* of the Fox collection are (I consider) the sexes of one species; I have it also from California, both sexes at same locality.

P. venusta Smith: I have a specimen of this, not hitherto recorded north of Mexico, from Palmerlee, Arizona, the white of tip of wings extends to the middle of the marginal cell.